SUPPLEMENTAL MATERIAL

SUPPLEMENTAL RESULTS & DISCUSSION

SUPPLEMENTAL RESULTS

Multivariate Logistic Regression Assessing Potential Predictors

Education (OR 1.90, CI 1.03-3.56, *P*=.04), age (OR 1.10, CI 1.04-1.18, *P*=.002), and sex (OR 2.85, CI 1.46-5.71, *P*=.003) were predictive of internet use to help with diet, weight, or physical activity at baseline (Table S6). Education was predictive of internet use to communicate with a doctor's office at baseline (OR 2.49, CI 1.38-4.58, *P*=.003), three months after risk disclosure (OR 3.64, CI 1.95-7.01, p<0.001), and six months after risk disclosure (OR 2.81, CI 1.52-5.37, *P*=.001), as well as having access to the patient portal (OR 3.74, CI 1.79-8.12, *P*=.0004), internet use to look for health information in general (OR 2.06, CI 1.12-3.80, *P*=.02), and low internet use for information about how genetic factors affect CHD risk (OR 0.45, CI 0.24-0.83, *P*=.01) at three months after risk disclosure, and internet use to keep track of personal health information (OR 2.02, CI 1.11-3.71, *P*=.02), internet use for other health-related reasons (OR 1.99, CI 1.05-3.84, *P*=.03), and having access to the patient portal (OR 2.14, CI 1.12-4.14, *P*=.02) at six months after risk disclosure. Family history was predictive of visiting a website specifically to learn about CHD (OR 6.54, CI 2.23-20.93, *P*=.001), internet use to look for information about how personal health habits affect CHD risk (OR 2.42, CI 1.26-4.71, *P*=.008), and internet use for information about how genetic factors affect CHD risk (OR 2.40, CI 1.14-5.00, *P*=.02) at six months after initial risk disclosure, and signing up for the patient portal prior to enrolling in the study (OR 5.41 (1.2-40.07, *P*=.048). Sex was predictive of internet use for other health-related reasons at six months after risk disclosure (OR 2.01, CI 1.01-4.08, *P*=.046). Age was also

predictive of internet use to help with diet, weight, or physical activity (OR 1.07, CI 1.00-1.13, *P*=.04), sharing CHD risk with parents (OR 1.13, CI 1.05-1.23, *P*=.002), and not sharing CHD risk with their PCP (OR 0.94, 0.88-1.0, *P*=.04) at three months after risk disclosure.

Baseline GRS as an independent predictor

Baseline GRS was predictive of internet use to look for information about how personal health habits, such as diet and exercise, affect CHD risk (OR 0.98, CI 1.07-1.02, p=0.002), internet use to look for information about CHD (OR 0.19, CI 0.68-5.20, p=0.01), internet use to look for health or medical information in general (OR 2.95, CI 1.07-8.33, p=0.04), discussing their CHD risk with others (OR 0.16, CI 0.67-6.24, p=0.02), and sharing their CHD risk with siblings (OR 0.27, CI 0.09-0.74, p=0.01) and extended family (OR 8.54, CI 1.37-67.53, p=0.03) at three months after initial risk disclosure, as well as internet use to keep track of personal health information via the patient portal (OR 2.82, CI 1.04-7.90, p=0.04) at six months after initial risk disclosure.

Baseline Internet Use

The following questions were adapted from the HINTS 2012 survey: “Do you ever go on-line to access the Internet or World Wide Web, or to send and receive email?”, “When you use the Internet, do you access it through: a regular dial-up telephone line; broadband such as DSL, cable, or fiber optic connection; a cellular network (i.e., phone, 3G/4G); a wireless network (Wi-Fi)?”, “Do you access the Internet any other way?”. The questions, “Do you have internet access at home?” and “Do you have internet access at work?” were adapted from the HINTS 2005 survey. All of these questions were assessed only at the beginning of the trial, prior to risk disclosure.

At baseline, 98% of all trial participants accessed the internet to send or receive emails, with equal distribution (P=1) between the CRS (97%) and GRS arms (97%) (Table S7), and between H-GRS (98%) and L-GRS (96%) participants (P=.68). Internet use for all trial participants was primarily with broadband connection such as DSL or cable (82%), with no difference between the CRS (84%) and GRS (80%) arms (P=.58). Trial participants also used the internet with a wireless network (79%), with no difference between the CRS (82%) and GRS (76%) arms (P=.39). Incidentally, L-GRS (89%) participants reported using a broadband connection such as DSL or cable than H-GRS (70%) participants (P=.001). There was no significant difference between H-GRS (76%) and L-GRS (76%) participants regarding use of the internet with a wireless network (P=1). Most trial participants used the internet at home (95%), with no difference between the CRS (94%) and GRS (95%) arms (P=1) and between H-GRS (96%) and L-GRS (94%) participants (P=1). Trial participants also used the internet at work (84%), with no difference between the CRS (83%) and GRS (85%) arms (P=.85) and between H-GRS (82%) and L-GRS (85%) participants (P=.7).

These results were consistent with prior findings that a majority of U.S. adults report using the internet [1,2]. Ease of access to the internet was an important component of this study, as internet access has been considered an information technology enabler that positively correlates with frequency of online health information seeking [3].

At baseline, there was no difference between CRS and GRS participants regarding internet use to seek information about heart disease or other health information. Incidentally, at baseline, GRS participants were more likely than CRS participants (OR 1.84 (1.02-3.38), P=.04) and H-GRS participants were more likely than CRS participants (OR 2.49 (1.13-5.63), P=.02) to have used a website to help with diet, weight, or physical activity; there was no difference between H-GRS and L-GRS participants or between CRS and L-GRS participants (data not shown). Of note, sex (OR 2.88

(1.46-5.83), P=.002), college-level education (OR 2.05 (1.1-3.9), P=.02), and age (OR 1.08 (1.02-1.14), P=.01) were predictors of internet use for help with diet, weight, or physical activity. These findings were noted only at baseline, and did not persist throughout the study. There was no significant difference among any of the groups (GRS, CRS, H-GRS, or L-GRS) at V3 and V4 (three and six months after initial risk disclosure) regarding internet use for help with diet, weight, or physical activity (e.g., for GRS participants compared with CRS participants, P=.31 and P=.24 at V3 and V4, respectively).

Baseline PHR Access

At baseline, there was no difference between CRS and GRS participants regarding internet use to communicate with a doctor's office (OR 1.25 (0.7-2.23), P=.45) or to keep track of personal health information such as care received, test results, or upcoming medical appointments (OR 0.99 (0.55-1.75), P=.96), via the electronic patient portal (see Figure S2).

Baseline Social Network

At baseline, no trial participants reported active use of Facebook or Twitter. The majority of participants reported having friends or family members with whom they discussed their health (CRS 87%, GRS 87%, P=.87), with most participants reporting no networking with community organizations for provision of health information (CRS 24%, GRS 28%, P=.48).

SUPPLEMENTAL DISCUSSION

Assessment of Social Media Responses

The following question was added to address information sharing in online social networks: "Did you use Facebook, Twitter, or other social networking services to share your CHD risk with others?". Information sharing via online social network platforms did not differ significantly between GRS and CRS participants and was minimal (0% at 3 months after risk disclosure and up to 1% at 6 months after risk disclosure) for all trial participants (Table 3). This could be due to the average age of 59 years for trial participants. This is consistent with findings that less than 50% of internet users in the general population with ages 50-64 years report using social networking sites [1,4]. Despite this, social media use in this age group and in the general population is increasing (Figure S5) [1,4]. This may potentially help patient engagement in precision medicine.

Delayed GRS Disclosure to CRS Participants

CRS participants also received their GRS in a second risk disclosure session (after completing information seeking and sharing surveys at that visit) hosted by a study coordinator at the end of the trial, with the same standardized template used by the genetic counselor upon initial risk disclosure. CRS participants completed additional surveys by mail three months after their delayed GRS disclosure.

Three months after delayed GRS disclosure to CRS participants at the end of the trial, their final surveys sent in by mail indicated no difference between CRS participants with high genetic risk and CRS participants with low genetic risk regarding internet use, PHR access via the patient portal, information sharing, or social network following delayed risk disclosure (data not shown).

Disclosure of a high GRS to CRS participants later on in the trial at V4 did not lead to increased patient engagement relative to those who received a low GRS at V4, likely due to overall positive relationships between GRS disclosure (whether high or low) and patient engagement practices established during the study.

Internet Websites

Participants were asked throughout the MI-GENES trial to identify specific internet websites to which they turned for CHD information, and to describe the usefulness of the information they found. An overwhelming majority of study participants (n=25 at baseline, n=24 at 3 months post-disclosure, n=14 at 6 months post-disclosure) who responded to these questions identified Mayo Clinic's public website (http://mayoclinic.org) (88% at baseline, 80% at 3 months post-disclosure, 86% at 6 months post-disclosure), while some also noted the American Heart Association's website (http://www.heart.org) (8% at baseline, 8% at 3 months post-disclosure, 7% at 6 months post-disclosure), WebMD (http://webmd.com) (20% at baseline, 8% at 3 months post-disclosure, 36% at 6 months post-disclosure), Medscape (http://www.medscape.com) (0% at baseline, 4% at 3 months post-disclosure, 0% at 6 months post-disclosure), or Google (http://www.google.com) (0% at baseline, 0% at 3 months post-disclosure, 7% at 6 months post-disclosure) . In general, participants who responded to the question about information usefulness (n=46 at baseline, n=30 at 3 months post-disclosure, n=16 at 6 months post-disclosure) thought the information they found was very useful (77% at baseline, 33% at 3 months post-disclosure, 44% at 6 months post-disclosure) or somewhat useful (77% at baseline, 66% at 3 months post-disclosure, 50% at 6 months post-disclosure). While not mentioned by study participants, MedLinePlus (https://medlineplus.gov), which carries extensive health information with interactive tutorials from the United States National Library of Medicine, and the National Institutes of

Health (NIH)'s Health Information website (https://www.nih.gov/health-information) might also be useful.

Enhancing GRS Reports

Genetics education resources for physicians and patients are available online, including but not limited to information available at the following government and national organization websites: https://ghr.nlm.nih.gov/, https://myresults.org/, https://www.genome.gov/10000464/online-genetics-education-resources/, and http://www.ashg.org/press/healthprofessional.shtml. Such resources could assist patients and physicians to further understand genetic risk reports. These resources could be used in concert with websites mentioned prior for discussion of genetics, CHD, and lifestyle behaviors. These resources, along with links to relevant journal articles [5,6] and tips for finding reliable health information online and reviewing medical literature (https://www.genome.gov/11008303/finding-reliable-health-information-online/, https://medlineplus.gov/evaluatinghealthinformation.html), could potentially be included as an Appendix in the GRS report, for physicians and patients seeking additional reliable information. The GRS report in MI-GENES included the following recommendation, which could be adopted for other risk score reports to assist patients: "Consultation with a physician is recommended. Interpretation of the genetic results needs to be made in the context of each patient's unique cardiovascular risk profile." " Genetic counselors should be trained to undergo these discussions with patients and to provide resources with more information, as in the MI-GENES study. Participants received a brochure with additional information, beyond their risk score report available in the medical record.

Information seeking and sharing compared to other genetic and non-genetic studies

Information seeking and sharing behaviors in the MI-GENES study present a number of similarities and differences, when compared to other genetic studies related to CHD and its risk factors. In a most recent study, 17% of the study participants who received single genotype information for CHD in a direct-to-consumer fashion shared this information with their health care provider, and another 30% of the participants expressed an intent to share the information with a health care provider [7]. A previous study that also disclosed single genotype CHD risk information in a direct-to-consumer fashion indicated that 77% the of individuals had discussed their results with anyone, particularly their spouses (20%) and other family members (18%) [8]. Individuals also sought information online about the effect of health habits (65%) or family history (36%) on their CHD risk. These trends have also been investigated among patients who received their genetic risk information for type-2 diabetes mellitus [9]. In that study, three months after risk disclosure 74% of the participants shared their results with others, such as their spouses, children, other family members, co-workers, friends, or primary care physician. There was a higher trend to share information among patients who received their information from a genetic counselor rather than receiving this information online in a direct-to-consumer fashion. At the same time point, 32.6% of the participants had sought information online related to their test results. These results are largely similar to those in the present study, in which participants who received their genetic risk exhibited high levels of information seeking online related to their test results and to the effects of heritability and health habits on CHD risk, and sharing their genetic risk information with others such as their health care provider, spouses, children, other family members, friends, or co-workers.

Information seeking and sharing behaviors in the MI-GENES study also bear similarities and differences, when compared to genetic studies related to other conditions, such as cancer. There is great

interest in assessing information-seeking behavior among patients with cancer [10]. Studies surrounding disclosure of cancer genetic test results have found that participants are most likely to communicate test results to their parents and least likely to their children [11,12]. Non-disclosure can be due to a desire to protect family members from traumatic information [12]. This finding was the opposite of results noted in the MI-GENES study, in which participants shared their CHD risk information with their children more often than their parents. This may be due to the view of CHD as a modifiable condition, for which participants' children could adjust their risk with appropriate interventions. Cancer might be considered less modifiable, and disclosing risk for cancer might therefore be viewed as more traumatic.

Of participants who received their genetic information for cancer, those with mutations shared their test results with a greater proportion of family members and had higher interest in genetic information [11]. This was similar to results from the MI-GENES Study, in which participants with higher risk shared their risk information with others more extensively and even encouraged others more frequently to be screened for their own CHD risk. In addition, individuals with high genetic risk trended towards having a higher interest in genetic information over the course of the trial than those who received conventional risk information alone (OR 2.02, CI 0.9-4.65, p=0.09). In a study on hereditary breast and ovarian cancers, participants cited preventive purposes as the primary reason for sharing genetic test information with their family members, as opposed to seeking emotional or informative social support [13]. Study results underscore the implications of genetic rest results for biological family members, beyond the index patient [11].

Information seeking and sharing behaviors in the MI-GENES study also have similarities and differences with findings from non-genetic studies. Much of the literature on information seeking and sharing following appointments during which non-genetic information is disclosed suggests that a great majority of this post-visit process is focused on information seeking online [14,15]. This process often

occurs in online fora among those in patients' non-biological social networks [14,15], rather than among biological contacts. Indeed, discussions with non-biological contacts during information seeking online was particularly prevalent following medical appointments with disclosure of non-genetic information. This is in contrast to trends (towards sharing of health information with biological contacts primarily in person) noted after disclosure of genetic information, as in the present study, and of course lowers the chance for cascade family screening. Sharing of health information with non-biological contacts is nevertheless similar to the present study, which addresses risk for developing a common chronic condition that affects much of the national population regardless of relatedness. Cited reasons for information seeking and sharing after non-genetic medical appointments include curiosity (e.g., about disease prognosis and options for self-management), uncertainty, dissatisfaction with the physician's performance, visit-induced worry, and perceived risk [14-18]. Information seeking behavior that patients show after receiving medical information is considered a surrogate to their engagement in their own medical care and wellbeing, and a mature coping strategy to deal with illness [19]. Post-visit information seeking can depend on an individual's sense of self-responsibility in the coping process [17], and in turn increases self-efficacy and response-efficacy (i.e., belief in medical management efficacy) [16].

Potential Impact of Information Behavior on Decision-Making

Most participants who received their genetic risk information for type-2 diabetes mellitus in another study reported minimal effort needed to find information (3.8%), little to no frustration during the search (3.8%), little to no concern with the quality of information (16.9%), and minimal difficulty understanding the information (3.8%) [9]. The majority of participants (81.2%) listed the internet as their primary source of health information, particularly government health agencies, hospital or health center websites, and non-profit or support organizations website. Very few participants (4%) listed family,

friends, co-workers, or their health care provider as their primary resource for health information. This suggests that individuals may more readily seek health information from websites than from others in their social networks. Thus, health decisions made during the MI-GENES study may have been more dependent on seeking information from websites online than from information seeking in person in social networks, while information sharing in social networks might have provided support and potentially aided health promotion. Nevertheless, we recognize that individuals can turn to family members or peers for health information [20].

In addition, all of the medical websites in the preceding paragraphs encourage lifestyle modification regardless of heritability (e.g., http://www.mayoclinic.org/departments-centers/cardiovascular-diseases/overview/specialty-groups/early-atherosclerosis-clinic/overview, http://www.mayoclinic.org/diseases-conditions/heart-disease/in-depth/heart-disease-prevention/art-20046502/, http://www.heart.org/HEARTORG/Conditions/More/MyHeartandStrokeNews/Family-History-and-Heart-Disease-Stroke_UCM_442849_Article.jsp#.WEyz5bIrK5s, and http://www.webmd.com/heart-disease/news/20111011/diet-may-cut-heart-risk-due-to-bad-genes#1, http://www.cdc.gov/heartdisease/family_history.htm). Further, during risk disclosure in the MI-GENES study, the genetic counselor emphasized the probabilistic nature of the GRS and encouraged participants to pursue lifestyle modification [21]. This is consistent with a recent study illustrating that lifestyle modification can influence CHD risk independently of underling genetic risk [5]. While it possible that information seeking and sharing online and offline could have influenced decision-making [20], shared decision-making for statin initiation occurred immediately following risk disclosure. Individuals with high GRS in our study were more likely to initiate statins than CRS participants, and than individuals with low GRS [21]. It is likely that participants with high genetic risk ascribed greater value to the efficacy of medication therapy (i.e., statin initiation) than lifestyle modification, consistent

with other studies [22]. Conversely, participants with low GRS trended towards being more likely than CRS participants to use the internet for information about how personal health habits affect CHD risk. L-GRS participants may have chosen to learn more about conventional modifiable risk factors, while feeling empowered in the face of lower genetic risk for CHD.

Potential Impact of Sociodemographic Characteristics on Information Behavior

Similar to results in our study (60%-70%), a recent national report indicated some college education, a college degree, or higher in 59% of the American population, with an identical proportion (59%) of individuals aged 45-60 years reporting this level of education, and 33% of the general population having a bachelor's degree [23]. This education level was similar to the populations reported in several other studies assessing health information seeking [8-11,15,18,24,25]. Education level associated with information seeking in our study (though not with information sharing) (see preceding section 'Multivariate Logistic Regression Assessing Potential Predictors' in Supplemental Results).This was similar to several prior studies [18,24,26], while other studies suggested no significant association between education and information seeking [9,15]. Interestingly, in one study, less than half of study participants were college educated, and participants frequently shared health information with family members to promote disease prevention [13]. Additionally, education level may associate with seeking genetic testing [27]. Thus, with 59% of the general population reporting some college education, a college degree, or higher, a potential majority of the general population may seek genetic testing, as we continue to pursue precision medicine. Systems should be put in place to provide, interpret, and guide such testing as appropriate. Infrastructure and policy should also be established to ensure, and perhaps even emphasize, access and support for individuals without college education to consider genetic testing, for equitable health care utility.

The mean age of 59 years for participants in our study was similar in recent reports, in which higher rates of internet use and information seeking were noted in 'younger' individuals with a mean age of 59 years (compared to 77 years) and an age range of 35-64 years (compared to ≥65 years), respectively [24,28]. Our findings also supported prior literature regarding association of sex, education, and family history with information seeking [24,28].

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SUPPLEMENTAL TABLES

Table S1 Information Seeking and Sharing Surveys at various visits

Survey	Visits at which assessed
Information Seeking	V3, V4, Post-V4
Internet Use	V1, V3, V4, Post-V4
Information Sharing	V3, V4, Post-V4
Social Network	V1, V3, V4, Post-V4

Data obtained at three months after initial risk disclosure (V3) and six months after initial risk disclosure (V4) are reported in the main manuscript, while data obtained at baseline (V1) and three months after delayed risk disclosure of GRS to CRS participants at the end of the trial (post-V4) are mentioned here as Supplementary Text.

Table S2 Internet Use Survey

	Yes	No	
1. Do you ever go on-line to access the Internet or World Wide Web, or to send and receive email?	☐	☐	
2. When you use the Internet, do you access it through: A. A regular dial-up telephone line?	☐	☐	
B. Broadband such as DSL, cable, or fiber optic connection?	☐	☐	
C. A cellular network (i.e., phone, 3G/4G)?	☐	☐	
D. A wireless network (Wi-Fi)?	☐	☐	
E. Do you have internet access at home?	☐	☐	
F. Do you have internet access at work?	☐	☐	
3. Do you access the Internet any other way?	☐	☐	
4. In the past 3 months, have you used the Internet to look for information about heart disease for yourself?	☐	☐	
5. Is there a specific Internet site you like to go to for information about heart disease?	☐	☐	
	Yes	**No**	**Don't know**
6. In the last 3 months, have you used the Internet for any of the following reasons? A. Used e-mail or the Internet to communicate with a doctor or doctor's office?**	☐	☐	☐
B. Looked for health or medical information?	☐	☐	☐

C. Used a website to help you with your diet, weight, or physical activity?	☐	☐	☐
D. Kept track of personal health information such as care received, test results, or upcoming medical appointments?**	☐	☐	☐
	Yes	**No**	**SPECIFY**
E. Do anything else health-related on the Internet?	☐	☐	_____ _
F. Visit an Internet web site to learn specifically about heart disease?*	☐	☐	_____ _

* Question 6F differs from question 4 by investigating whether the trial participant intentionally sought out internet websites to specifically learn about heart disease, whereas question 4 investigates passive internet use for heart disease information, which can occur while browsing webpages for other reasons. Question 6F differs from question 5, as the latter investigates the consistent use of a particular internet website to learn about heart disease. **Questions 6A and 6D refer to use of the online patient portal, and are analyzed as PHR access.

Table S3 Information Seeking Survey

	Yes	No
1. Have you looked for any information about how your personal health habits, such as your diet and exercise, affect your chances of getting a heart attack?	☐	☐
2. Have you looked for any information about how genetic factors affect your chances of getting a heart attack?	☐	☐

	Yes	No	Not Applicable
3. Do you have access to your Mayo Clinic Patient Portal?	☐	☐	☐
4. If yes, did you sign-up for the Patient Portal after enrollment in this study?	☐	☐	☐
5. Did you use the Patient Portal to access information related to your risk of having a heart attack as a part of this study?	☐	☐	☐
6. After enrollment in this study, did you search for "Direct-to-Consumer" genetic testing websites?	☐	☐	☐

Table S4 Information Sharing Survey

	Not at all	Very few	Some	A fair number	Frequently
1. Have you discussed your risk of having a heart attack with others?	☐	☐	☐	☐	☐
2. Who did you talk to about your results? ☐A. Friends ☐B. Family members ☐C. Co-workers ☐D. Other					

	Yes	No	Not Applicable
3. Did you share your risk of having a heart attack with your parents?	☐	☐	☐
4. Did you share your risk of having a heart attack with your siblings?	☐	☐	☐
5. Did you share you risk of having a heart attack with your spouse?	☐	☐	☐
6. Did you share you risk of having a heart attack with your children?	☐	☐	☐
7. Did you share your risk of having a heart attack with your extended family (aunts, uncles, cousins, nieces, etc…)?	☐	☐	☐
8. Did you share or intend to discuss your risk results with your primary care provider?	☐	☐	☐
9. Did you use Facebook to share your risk of having a heart	☐	☐	☐

attack with others?			
10. Did you use Twitter to share your risk of having a heart attack with others?	☐	☐	☐
11. Did you use other social networking services to share your risk of having a heart attack with others?	☐	☐	☐

	Not at all	**Very few**	**Some**	**A fair number**	**Frequently**
12. Have you encouraged others to be screened for risk of having a heart attack?	☐	☐	☐	☐	☐

Table S5 Social Network Survey

	Yes	No	Don't know
1. Do you have friends or family members that you talk to about your health?	☐	☐	☐
2. Do any community organization(s) provide you with information on health?	☐	☐	☐

Table S6 Multivariate logistic regression assessing sociodemographics as potential predictors

	Multivariate logistic regression (OR) [a]				
	Seeking[b]	Seeking[c]	Seeking[d]	Sharing[e]	Sharing[f]
Age (years)	1.10 [g]	1.05	1.05	1.00	1.02
Female sex, n (%)	2.85 [g]	0.48	0.99	0.92	2.35
Family history of CHD, n (%)	1.42	6.14 [g]	1.34	2.31	1.77
College education, n (%)	1.90 [g]	0.40	1.23	1.19	0.87
GRS	1.14	0.14	0.48	0.44	0.78
CRS, 10-year probability	0.98	0.89	0.90	1.03	1.02

[a] Data are presented for representative information seeking and sharing question responses expressed as odds ratio after adjusting for all other baseline characteristics (for the continuous age, CRS, and GRS variables the odds ratio is per unit change in regressor), [b] "Have you used the Internet for the following reason: used a website to help you with your diet, weight, or physical activity?" at baseline, [c] "Did you sign-up for the Patient Portal after enrollment in this study?" at six months after initial risk disclosure, [d] "Did you use the Patient Portal to access information related to your risk of having a heart attack as a part of this study?" at six months after initial risk disclosure, [e] "Have you discussed your risk of having a heart attack with others?" at six months after initial risk disclosure, [f] "Who did you talk to about your results? B. Family members" at three months after initial risk disclosure. [g] $p < 0.05$. CHD: coronary heart disease; CRS: conventional risk score; GRS: genetic risk score.

Table S7 Baseline internet use

	CRS n=100 (%)	GRS n=103 (%)	P-value
1. Do you ever go on-line to access the Internet or World Wide Web, or to send and receive email?	97	97	1
2. When you use the Internet, do you access is through:			
A. A regular dial-up telephone line?	3	8	
B. Broadband such as DSL, cable, or fiber optic connection?	84	80	0.58
C. A cellular network (i.e., phone, 3G/4G)?	58	55	
D. A wireless network (Wi-Fi)?	82	76	0.39
E. Do you have internet access at home?	94	95	1
F. Do you have internet access at work?	83	85	0.85
3. Do you access the Internet any other way?	94	95	1

These questions were assessed only at the beginning of the trial, prior to risk disclosure. The table reports the numbers and percentages for the response 'Yes' to each question. P-values bolded are considered significant (<=0.05) or borderline significant (<0.1 and >0.05). CRS = conventional risk score; GRS = genetic risk score.

Table S8 Additional information seeking and sharing behaviors significantly different at 3 months or from 3 months to 6 months after risk disclosure

Survey results for GRS participants relative to CRS participants	OR	95% CI	P-value
Information Seeking: Accessing information via websites or personal health records (PHR)/patient portals for heart health	**3 to 6 months after initial risk disclosure**		
2. Have you looked for any information about how genetic factors affect your chances of getting a heart attack?	2.78	1.46-5.45	0.01
5. Did you use the Patient Portal to access information related to your risk of having a heart attack as a part of this study?	2.69	1.23-6.28	0.03
Internet Use: Online activity and electronic communication	**3 to 6 months after initial risk disclosure**		
4. In the past 3 months, have you used the Internet to look for information about heart disease for yourself?	2.28	1.11-4.90	0.03

For the Information Seeking survey, questions 1, 2, and 6 were considered strictly 'internet use', while questions 4-5 were considered 'Personal health record (PHR) access'. For the Internet Use survey, questions 6A and 6D were considered 'PHR access' via the patient portal, while remaining questions were considered strictly 'Internet use'. The table reports the odds ratio and confidence interval for questions with significantly different responses by GRS participants relative to CRS participants. CI = confidence interval; CRS = conventional risk score; GRS = genetic risk score; OR = odds ratio.

SUPPLEMENTAL FIGURES

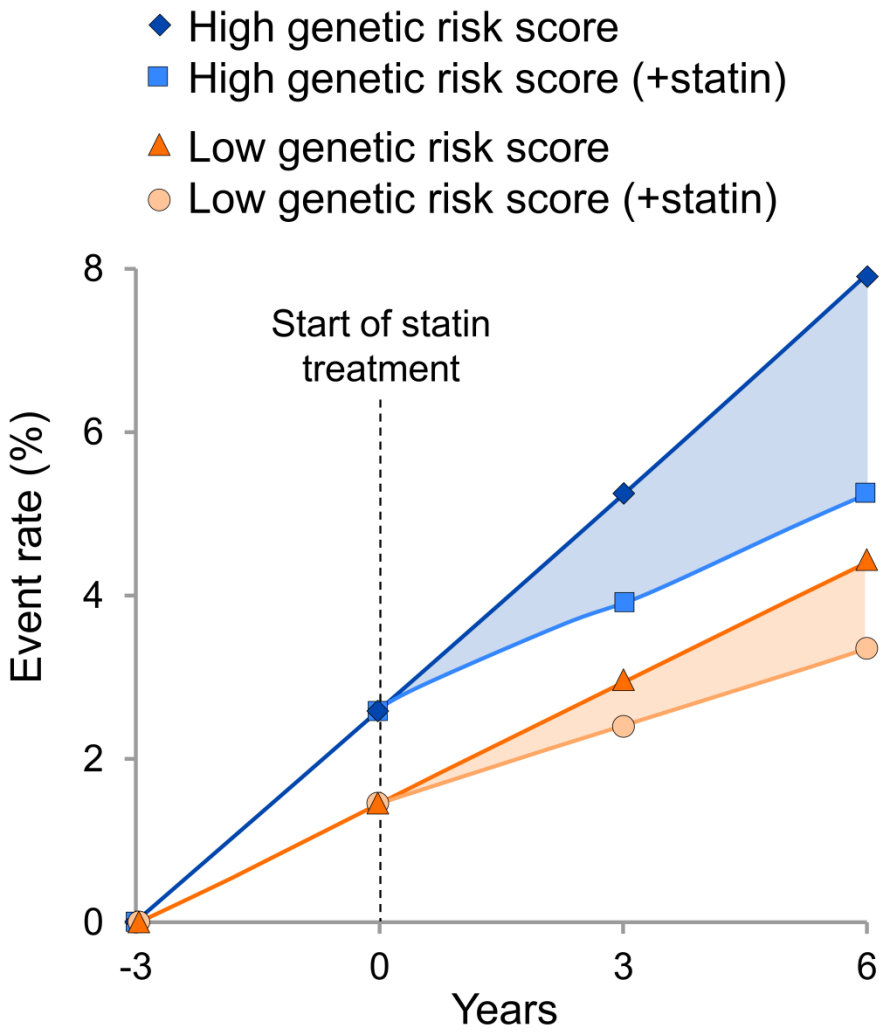
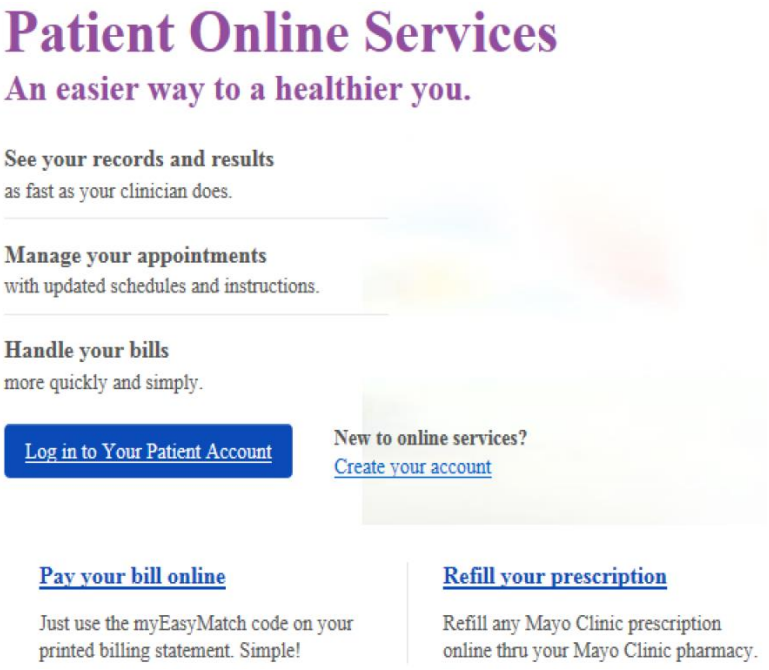


Figure S1 A multi-locus GRS for CHD predicts CHD events and clinical benefit from statin therapy. High GRS (blue lines) associates with more CHD events and a greater extent of clinical benefit from statin therapy (+statin; shaded areas) than low GRS (orange lines). CHD = coronary heart disease, GRS = genetic risk score. Minimally adapted from The Lancet, Vol. 385, Heribert Schunkert, Nilesh J Samani, Statin treatment: can genetics sharpen the focus?, Pages No. 2227-2229, Copyright 2015, with permission from Elsevier [19].

a.



b.

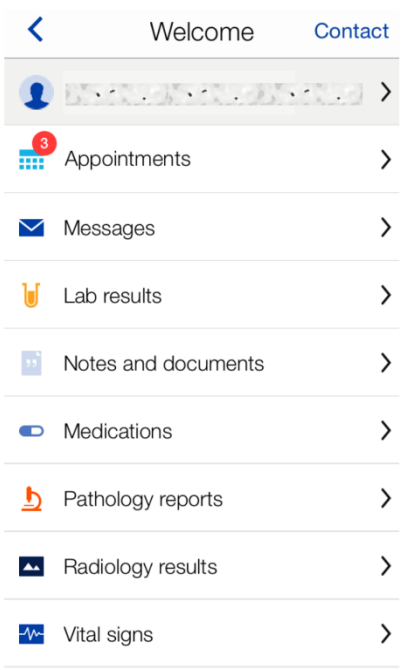


Figure S2 Mayo Clinic patient portal. The Mayo Clinic patient portal can be publicly accessed online by a website (welcome screen shown in a.) or using the Mayo Clinic mobile application (screen shot in b.). From the Mayo Foundation for Medical Education and Research [29].

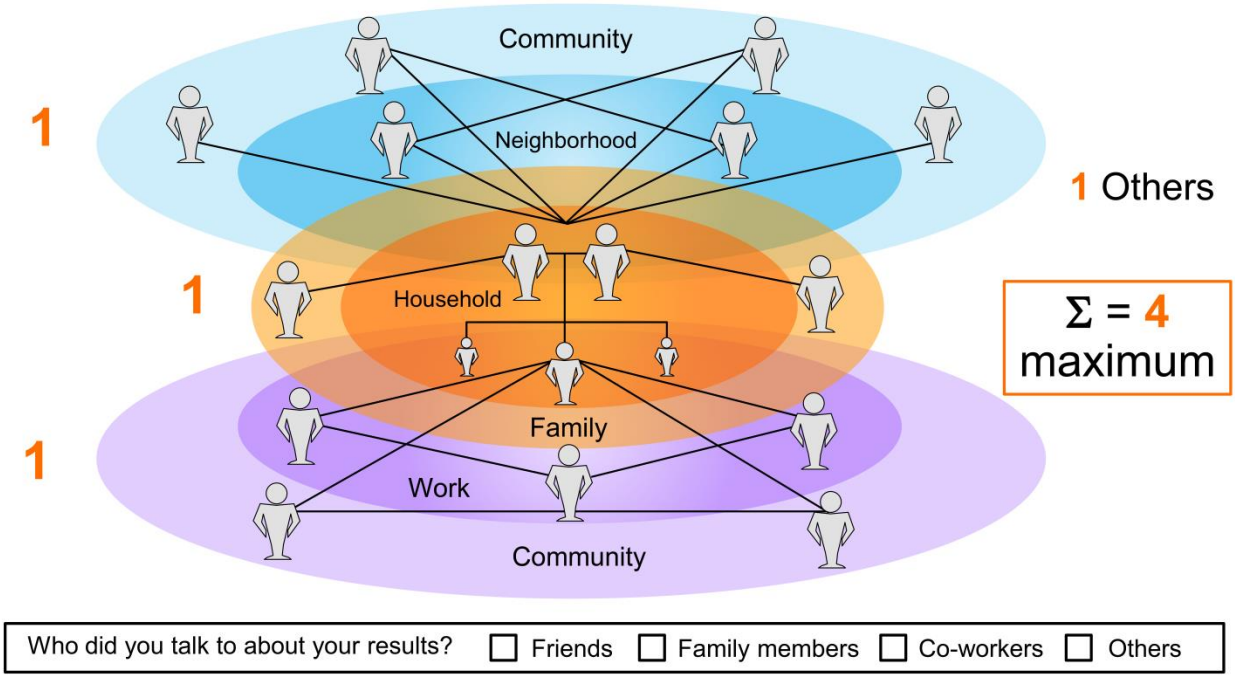


Figure S3 Spheres of influence for Sharing Radius. Multiple social spheres representing interconnectedness of the individual patient or trial participant with various social ties provide several settings in which trial participants can simultaneously engage those in their social networks to share information, embrace support mechanisms, and encourage others in peer networks toward prevention and health promotion. The sharing radius can include (in no specified sequence) family members at home and outside of the immediate household, friends and neighbors in the community, colleagues at work, and others such as primary care provider and those in online peer support networks. In this study, each of four spheres was given a score of 1, for a total sum (∑) of 4 for the information sharing radius. This was assessed with the question, "Who did you talk to about your results: friends, family members, co-workers, others?". Adapted from the Centers for Disease Control and Prevention [30].

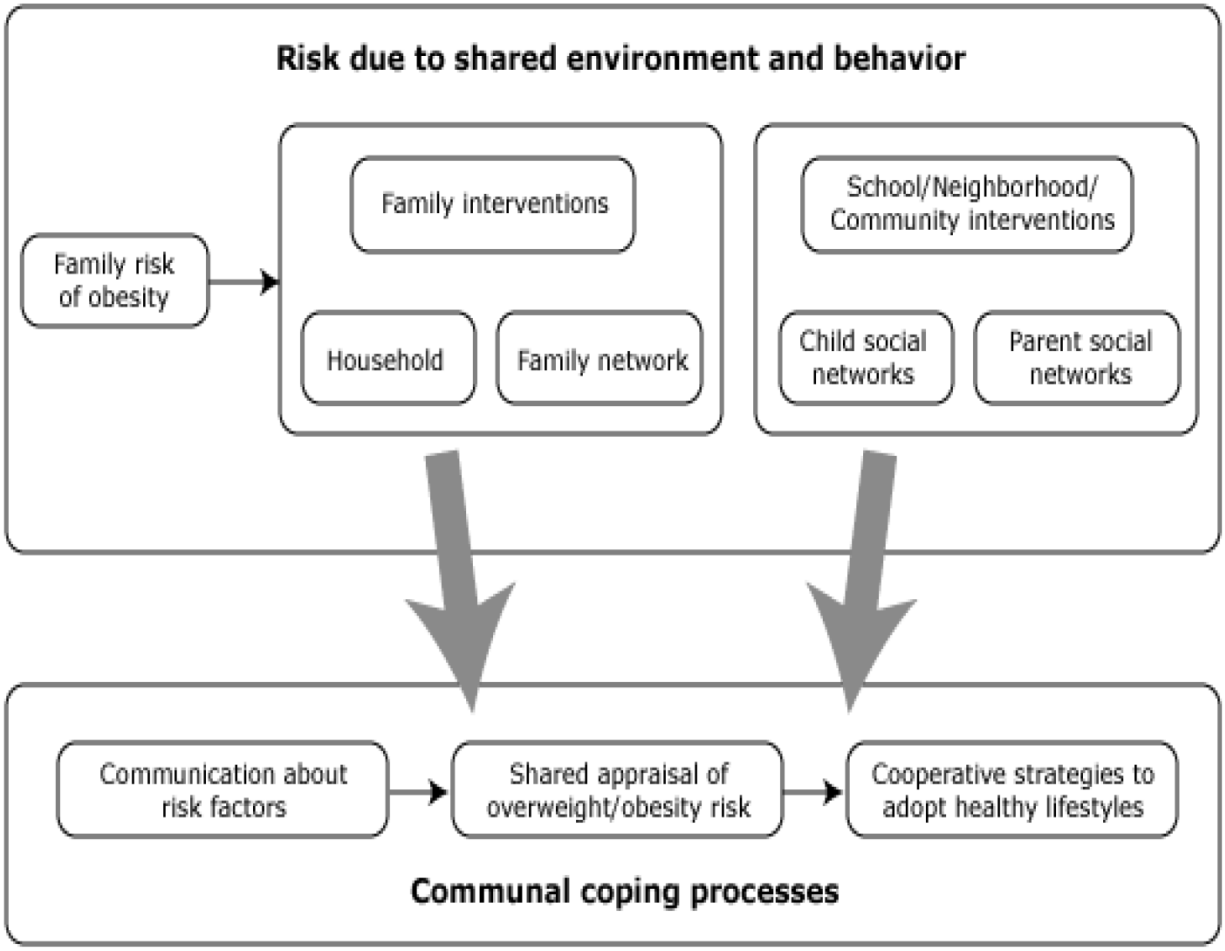


Figure S4 Communal coping with cooperative strategies. Interpersonal relationships can serve as a conduit for collective behavior change in social networks at home, at work, and in the community, prioritizing relational over individual processes for prevention and health promotion**.** From the Centers for Disease Control and Prevention [30].

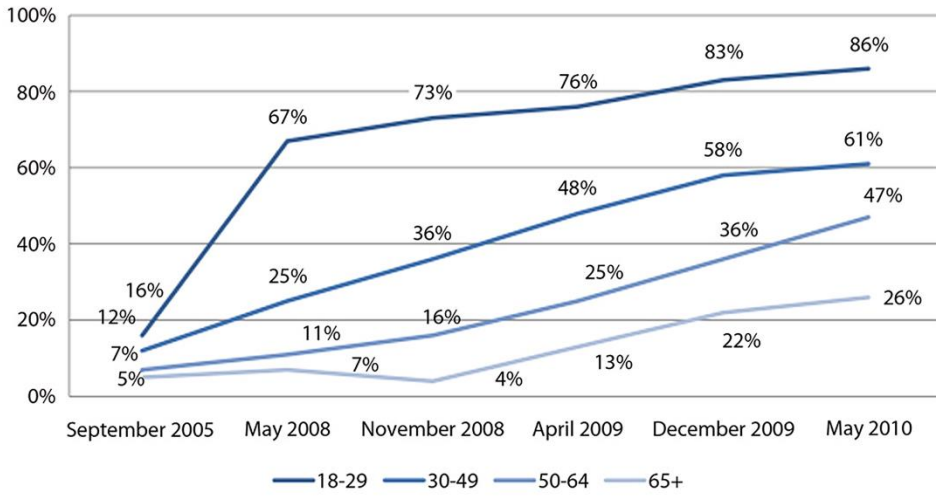


Figure S5 Social Media use decreases with age. The percentage of adult internet users of social media shows an inverse relationship with age, while increasing over time in age groups 18-29, 30-49, 50-64, and 65+. Reprinted from Gastrointestinal Endoscopy, 77(3), Prasad B. Social media, health care, and social networking, 492-495, Copyright 2013, with permission from Elsevier, with special credit also to the PEW Research Center Social Life of Health Information [1,4].

CONSORT 2010 checklist of information to include when reporting a randomised trial*

n/Topic	Item No	Checklist item	Reported on page No
Title and abstract			
	1a	Identification as a randomised trial in the title	NA - post-hoc analysis
	1b	Structured summary of trial design, methods, results, and conclusions (for specific guidance see CONSORT for abstracts)	2
Introduction			
Background and objectives	2a	Scientific background and explanation of rationale	3-4
	2b	Specific objectives or hypotheses	4
Methods			
Trial design	3a	Description of trial design (such as parallel, factorial) including allocation ratio	5-9 & Figure 1
	3b	Important changes to methods after trial commencement (such as eligibility criteria), with reasons	NA
Participants	4a	Eligibility criteria for participants	5 & Figure 1
	4b	Settings and locations where the data were collected	5-9 & Figure 1
Interventions	5	The interventions for each group with sufficient details to allow replication, including how and when they were actually administered	5-9, 28/ Ref20
Outcomes	6a	Completely defined pre-specified primary and secondary outcome measures, including how and when they were assessed	5-9, 28/ Ref20
	6b	Any changes to trial outcomes after the trial commenced, with reasons	NA
Sample size	7a	How sample size was determined	Ref 20
	7b	When applicable, explanation of any interim analyses and stopping guidelines	NA
Randomisation:			
Sequence generation	8a	Method used to generate the random allocation sequence	Ref 20
	8b	Type of randomisation; details of any restriction (such as blocking and block size)	Ref 20
Allocation concealment mechanism	9	Mechanism used to implement the random allocation sequence (such as sequentially numbered containers), describing any steps taken to conceal the sequence until interventions were assigned	NA
Implementation	10	Who generated the random allocation sequence, who enrolled participants, and who assigned participants to interventions	NA
Blinding	11a	If done, who was blinded after assignment to interventions (for example, participants, care providers, those assessing outcomes) and how	Ref 20
	11b	If relevant, description of the similarity of interventions	Ref 20
Statistical methods	12a	Statistical methods used to compare groups for primary and secondary outcomes	9
	12b	Methods for additional analyses, such as subgroup analyses and adjusted analyses	9
Results			
Participant flow (a diagram is strongly recommended)	13a	For each group, the numbers of participants who were randomly assigned, received intended treatment, and were analysed for the primary outcome	Figure 1
	13b	For each group, losses and exclusions after randomisation, together with reasons	Figure 1
Recruitment	14a	Dates defining the periods of recruitment and follow-up	Figure 1/ref20
	14b	Why the trial ended or was stopped	NA
Baseline data	15	A table showing baseline demographic and clinical characteristics for each group	Table 1
Numbers analysed	16	For each group, number of participants (denominator) included in each analysis and whether the analysis was by original assigned groups	5-9, Table 2 /Ref 20
Outcomes and estimation	17a	For each primary and secondary outcome, results for each group, and the estimated effect size and its precision (such as 95% confidence interval)	10-14, Table 2
	17b	For binary outcomes, presentation of both absolute and relative effect sizes is recommended	NA
Ancillary analyses	18	Results of any other analyses performed, including subgroup analyses and adjusted analyses, distinguishing pre-specified from exploratory	10-14, Table 2
Harms	19	All important harms or unintended effects in each group (for specific guidance see CONSORT for harms)	NA

Discussion			
Limitations	20	Trial limitations, addressing sources of potential bias, imprecision, and, if relevant, multiplicity of analyses	20
Generalisability	21	Generalisability (external validity, applicability) of the trial findings	
Interpretation	22	Interpretation consistent with results, balancing benefits and harms, and considering other relevant evidence	15-20
Other information			
Registration	23	Registration number and name of trial registry	2
Protocol	24	Where the full trial protocol can be accessed, if available	Ref 20
Funding	25	Sources of funding and other support (such as supply of drugs), role of funders	21

*We strongly recommend reading this statement in conjunction with the CONSORT 2010 Explanation and Elaboration for important clarifications on all the items. If relevant, we also recommend reading CONSORT extensions for cluster randomised trials, non-inferiority and equivalence trials, non-pharmacological treatments, herbal interventions, and pragmatic trials. Additional extensions are forthcoming: for those and for up to date references relevant to this checklist, see www.consort-statement.org.